

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-SW02 / Transuranic Waste Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0480**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

Purpose

Savannah River Site currently stores ~ 11,000 cubic meters of waste contaminated with transuranic isotopes as a result of nuclear materials production in the DOE complex. It is estimated that 10,000 cubic meters will be generated through the year 2028. Approximately one third by volume of the legacy TRU waste is estimated to have an activity level of less than 100 nCi/g and could be dispositioned as low level waste or as mixed low level waste with proper characterization.

The goal of the TRU Waste Project is to properly characterize the waste to segregate the low level and mixed low level waste from the TRU inventory and to certify and dispose of all TRU and mixed TRU waste at the Waste Isolation Pilot Plant in New Mexico. The goal is also to perform the necessary processing/treatment of the low level waste to meet the appropriate Low Level Waste disposal criteria. The mixed low level waste will be supercompacted and blended with the higher activity TRU waste for disposal at WIPP.

The project has five major objectives:

- a) Continued receipt, inspection, and safe storage of the waste including the retrieval of 8809 earthen covered 55-gallon drums .
- b) Obtain the capabilities necessary to characterize, certify, and transport waste to WIPP for disposal.
- c) Commence mortgage reduction by properly characterizing and dispositioning that portion of TRU legacy waste that is low level waste.
- d) Provide the infrastructure to allow privatization initiatives to perform processing /treatment of waste.
- e) Supercompact the mixed low level waste segregated during characterization, blend with other high activity TRU waste to minimize void space, and dispose the blended waste at WIPP.

Definition of Scope:

Transuranic (TRU) waste is defined in DOE Order 5820.2A as waste contaminated with alpha-emitting transuranic radionuclides (radionuclides with atomic numbers greater than 92) with half lives greater than twenty (20) years in concentrations greater than 100 nanocuries per gram (nCi/g) of waste matrix. TRU Waste at the Savannah River Site that also contains hazardous constituents as defined in 40 CFR 261 and the South Carolina Hazardous Waste Management Regulations (SCHWMR) R.61-79.261 is referred to as Mixed TRU waste. Mixed TRU waste is managed in accordance with both DOE Orders and SC Hazardous Waste Management Regulations.

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-SW02 / Transuranic Waste Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0480**

Project Description Narratives

TRU and Mixed TRU waste streams are, and have been, generated primarily by Plutonium Separations Facilities and the Analytical Laboratories. Other past generators of significantly smaller volumes include Naval Fuels Facility, the Reactor Facility, the Fuel Fabrication Facility, the High Level Waste Tank Farms, and the Solid Waste Management Facility. In the late 1970's, SRS received a large volume of TRU waste from off-site generators including Los Alamos National Laboratory and the DOE Mound Site.

TRU waste is generally described by its container: drums, poly boxes, concrete casks, large steel black boxes, and other odd-sized containers because of the varied contents of waste containers. The container also dictates the storage configuration for TRU Waste packages. Drums are stored in culverts or on covered pads and other containers may be stored on uncovered pads that are exposed to the weather.

TRU Waste generated at SRS is primarily low density job control waste. It contains combinations of plastic, paper, rubber, glassware, metal items, lead lined gloves, filters, used equipment and other contaminated materials from routine processing.

The legacy TRU waste that is estimated to have an activity level of less than 100 nCi/g will continue to be managed as TRU waste due to insufficient assay technologies. The waste could be reclassified as low level waste or mixed low level waste with proper characterization.

Technical Approach:

Assumptions:

General assumptions for TRU waste are as follows:

- Negotiations with WIPP, the Nuclear Regulatory Commission (NRC), and other environmental agencies to revise the restrictive transportation limits of the TRUPACT II are successful.
- WIPP opens on schedule without additional restrictions and closes in 2033.
- A high activity TRU Waste Facility will be constructed and be operational from 2008-2030 to process the higher activity TRU Waste for shipment to WIPP.
- Assay techniques for Pu238 contaminated wastes and larger containers will be pursued and implemented at SRS using on-site and off-site technology to allow detailed characterization of packages that are not currently being characterized.
- HANDSS-55 demonstration is successful and the facility is operational from 2002-2010.
- Alpha-contaminated Mixed Low Level Waste (MLLW) segregated from the TRU Waste will be supercompacted at SRS, blended with other higher activity TRU waste to minimize void spaces, and shipped to WIPP for disposal.

TRU Waste is divided into waste groupings based primarily on the containers that store the waste. The amount of detailed information on the contents of each waste container is limited, however, the container type, generator, and radionuclide data provide information which allows the inventory of TRU waste to be placed into waste groupings supporting planning for future processing to meet the requirements of the WIPP WAC.

SRS will process the low activity TRU waste drums in a low activity TRU waste processing facility for certification, packaging and shipment to WIPP for final disposal. This facility will be operational from 2002-2010 and use the HANDSS-55 technology developed to meet SRS Need SR99-1010, Capability for the Visual Inspection, Sorting, Segregating, and Repackaging of Pu-239 and Pu-238, and , Potentially, Remote Handled Wastes Currently Stored in 55 and 83-Gallon Drums to Satisfy WIPP Requirements.

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Page 2 of 15

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-SW02 / Transuranic Waste Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0480**

Project Description Narratives

The high activity TRU waste containers will be processed in a high activity TRU waste facility for certification, packaging, and shipment to WIPP for final disposal. This facility will be operational from 2008-2030. The facility will use the remote handled size reduction technology being developed to meet SRS Need SR99-1012, Capability for remote Handling Size Reduction of TRU Mixed and Non-Mixed Waste.

The legacy TRU waste that is estimated to have an activity level of less than 100 nCi/g will be assayed when assay techniques are developed to meet SRS Need SR99-1003, Improvements to Physical, Chemical, and Radionuclide Quantification of Solid Waste. The assay information will be used to reclassify this waste as low level waste. The low-level waste would be processed identically to the low-level waste streams that best describe the waste matrices (job-control wastes). This will be true as long as the higher content of alpha contamination does not cause radiological control or emission concerns at the processing facility. The mixed low level waste will be supercompacted and blended with the higher activity TRU waste for disposal at WIPP.

Planning documents used as references in developing waste groupings and treatment technologies included:

- "Strategic Plan for SRS TRU Waste (U)", WSRC-RP-96-182, Rev. 0, 9/19/96.
- "Supporting Documentation for the TRU Waste Disposition Program", WSRC-TR-96-0316, 9/24/96.
- "SRS TRU Waste Program", SWE-SWE-96-0195, 5/15/97.
- "System Plan for the Solid Waste Division, WSRC-RP-98-00226, 10/30/98.
- TRU Waste Characterization Plan under development.

This plan relies on the significant cost savings and risk reduction that will be achieved, if the technology development initiative for Expanded Transportation system capabilities for Transuranic Waste, SRS Need SR99-1001, is successfully completed. It provides for the development of techniques for mitigation hydrogen (H₂) generation in TRUPACT (getters, recombiners, development of ASME STD for H₂ concentrations in TYPE B containers), and evaluation of alternative options for TRU Packaging.

If technology development initiative SR-1001 is not achieved, then other technologies will be required to ship higher levels of Pu238 waste in TRUPACT II containers. Other potential technologies are non-thermal destruction, alternative wet oxidation, or thermal destruction, SRS Need SR-1007, Treatment of High Activity TRU (Pu238) Waste for Destruction of Organic Constituents.

The plan also relies the cost saving of characterizing that portion of legacy as LLW on the development of characterization technology, SRS Need SR-1003, Improvements to Physical, Chemical, and Radionuclide Quantification, to allow characterizing and dispositioning that portion of TRU legacy waste that is low level waste.

Project Status in FY 2006:

A TRU Waste facility will be in place and operational with processing being performed on low activity TRU Waste containers. This facility will incorporate existing processing technology as well as robotics technology currently being developed. This facility is intended to be operational from 2002-2010.

Work to be completed by FY2006 will include: a) The retrieval of 8809 55 gallon drums (1762m³) b) The disposition of 1000 55 gallon drums of low level waste (200m³) c) The disposition of 200 HEPA filter containers (40m³) d) The disposal of approximately 2200 drums of waste at WIPP

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Page 3 of 15

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-SW02 / Transuranic Waste Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0480**

Project Description Narratives

(440m3) e) The disposition of approximately 7500 drums of MLLW (1500m3).

Post-2006 Project Scope:

A TRU Waste facility will be in place and operational with processing being performed on high activity TRU Waste containers. This facility will incorporate existing processing technology, robotics technology currently being developed, and equipment and services provided through privatization initiatives. This facility is intended to be operational from 2008 -2030. The retrieval of TRU waste storage Pad #1 will be performed after FY2006.

The TRU Waste treatment facility will process/treat TRU waste through FY2030.

Shipments of TRU Waste to WIPP will continue beyond 2006.

Project End State

Project End State will occur following the completion of all missions at SRS that generate TRU Waste. When all TRU Waste has been disposed of, all facilities will be operationally closed and turned over to the Environmental Restoration Division for final closure.

Cost Baseline Comments:

a) The characterization and repackaging of the TRU designated to be processed in the canceled line item, (Mixed Waste Containment/TRU Characterization facility), will be able to be performed in a TRU Waste facility processing low activity TRU Waste containers from 2002 -2010, and in a TRU Waste facility processing high activity TRU Waste containers from 2008 - 2030.

b) Escalation assumed at 2.7% each year.

Safety & Health Hazards:

The main hazard for storage and handling TRU waste is from the extreme toxicity of plutonium, and small particle size of plutonium oxide (airborne hazard). The project currently in the operating phase maintains the necessary functions for safe compliant storage within authorization basis and environmental regulations. Container degradation and the generation of hydrogen gas from radiolysis could result in a release scenario from a fire fueled by hydrogen gas generated within each drum or a leaking container due to corrosion. The small particle size of plutonium oxide makes airborne contamination a likely occurrence anytime containment is breached.

Hazards and controls in place are described in the following documents:

Safety Evaluation Report, Rev. 0, "Safety Evaluation Report For The Savannah River Site Solid Waste Management Facility, Safety Analysis Report, WSRC-SA-22, Rev. 0, December 1996", dated March 1997.

WSRC-SA-22, Revision 0, "Solid Waste Management Facility, Safety Analysis Report," dated December 1996.

WSRC-TS-95-16, "Technical Safety Requirements, Savannah River Site, Solid Waste Management Facility," April 1996.

Safety & Health Work Performance:

Dataset Name: **FY 1999 Planning Data**

Page 4 of 15

Date of Dataset: **9/20/1999**

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-SW02 / Transuranic Waste Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0480**

Project Description Narratives

Activities and check points are described by the Integrated Management System Description. The conditions and requirements are clearly established and agreed upon prior to the starting of any project and those requirements are contractually binding upon WSRC. The key elements of the WSRC Integrated Safety Program are to define the scope of work, identify and analyze hazards associated with the work, develop and implement hazard controls, perform work within controls, and provide feedback on adequacy of controls and continue to improve safety management. The WSRC Integrated Procedures Management System is the primary mechanism for implementing the objective, principles and functions of the Safety Management System. This system establishes Company-Level, Division-level, and Program-specific procedures consistent with organizational roles, and ensures a consistent, discipline site-wide approach to safety while performing work. The resource description, costs and skill mix are defined in the following Sections: Costs D.2.2 and D.3, FTEs D. 2.5 and 2.7 of this document.

PBS Comments:

Volume metrics notes:

Volume to EAV in 1997 & 1998 is volume reduced 4:1 (drums to be compacted).

Volume to EAV in 1998 & 2000 is not volume reduced (poly boxes).

Volume processed through CEEP is not volume reduced (for CIF, Idaho, and WIPP).

Baseline Validation Narrative:

General PBS Information

Project Validated?

Date Validated:

Has Headquarters reviewed and approved project?

No

Date Project was Added: 12/1/1997

Baseline Submission Date: 7/3/1999

FEDPLAN Project? Yes

Drivers:	CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
	N	Y	N	N	N	Y	N	N

Project Identification Information

DOE Project Manager: William L. Noll III

DOE Project Manager Phone Number: 803-725-2219

DOE Project Manager Fax Number: 803-725-1440

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-SW02 / Transuranic Waste Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0480**

General PBS Information

DOE Project Manager e-mail address: william.noll@srs.gov

Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006	
PBS Baseline (current year dollars)	303,207	1,531,773	1,834,980	12,528	12,528	8,729	8,729	13,991	10,602	11,596	23,207	25,936	47,338	29,601	119,679	
PBS Baseline (constant 1999 dollars)	263,359	946,285	1,209,644	12,528	12,528	8,729	8,729	13,991	10,234	10,804	21,054	22,911	40,717	24,792	97,599	
PBS EM Baseline (current year dollars)	303,207	1,531,773	1,834,980	12,528	12,528	8,729	8,729	13,991	10,602	11,596	23,207	25,936	47,338	29,601	119,679	
PBS EM Baseline (constant 1999 dollars)	263,359	946,285	1,209,644	12,528	12,528	8,729	8,729	13,991	10,234	10,804	21,054	22,911	40,717	24,792	97,599	
	2007	2008	2009	2010	2011- 2015	2016- 2020	2021- 2025	2026- 2030	2031- 2035	2036- 2040	2041- 2045	2046- 2050	2051- 2055	2056- 2060	2061- 2065	2066- 2070
PBS Baseline (current year dollars)	237,563	102,545	43,164	44,038	240,469	274,398	313,815	275,781	0	0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	188,641	79,287	32,497	32,283	162,855	162,656	162,822	125,244	0	0	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	237,563	102,545	43,164	44,038	240,469	274,398	313,815	275,781	0	0	0	0	0	0	0	0
PBS EM Baseline (constant 1999 dollars)	188,641	79,287	32,497	32,283	162,855	162,656	162,822	125,244	0	0	0	0	0	0	0	0

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Page 6 of 15

Project Baseline Summary Report

Data Source: EM CDB

Operations/Field Office: Savannah River

Site Summary Level: Savannah River Site

Project SR-SW02 / Transuranic Waste Project

Report Number: GEN-01b

Print Date: 3/9/2000

HQ ID: 0480

Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
0.00%	0.00%	0.00%	3.60%	3.60%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%
2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project: 9/30/2029

Current Projected End Date of Project: 9/30/2030

Explanation of Project Completion Date Difference (if applicable):

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	609,818	Actual 1997 Cost:	12,528	Actual 1998 Cost:	8,729
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	588,561	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):			15,891
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	604,452				

Project Cost Changes

Cost Adjustments Reconciliation Narratives

Cost Change Due to Scope Deletions (-):

Cost Reductions Due to Efficiencies (-):

Cost Associated with New Scope (+):

Cost Growth Associated with Scope Previously Reported (+): 583,933 Revised Ship-to-WIPP schedule and estimates for the Ship-to-WIPP shipment program

Cost Reductions Due to Science & Technology Efficiencies (-):

Dataset Name: FY 1999 Planning Data

Page 7 of 15

Date of Dataset: 9/20/1999

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-SW02 / Transuranic Waste Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0480**

Project Reconciliation

Subtotal:	1,188,385
Additional Amount to Reconcile (+):	2
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	1,188,387

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Certify 200 Drums to the WIPP WAC	SR-SW02-060		9/30/1999		9/30/1999						
Complete CAO Certification of Compliance to WIPP	SR-SW02-034		6/30/1999		6/30/1999						
Complete Ship to WIPP Line Mgmt Assessment.	SR-SW02-087		12/3/1998		12/3/1998						
Complete TRU Pad #2 Retrieval	SR-SW02-032		3/30/1999		3/30/1999						
Complete TRU Pad #3 Retrieval	SR-SW02-033		9/30/1999		9/30/1999						
Project Mission Complete	SR-SW02-008		9/30/2030								
Vent & Purge 3000 Drums	SR-SW02-061		9/30/1999		9/30/1999						
Project Start	SR-SW02-001		10/1/1996								

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Certify 200 Drums to the WIPP WAC	SR-SW02-060										
Complete CAO Certification of Compliance to WIPP	SR-SW02-034										
Complete Ship to WIPP Line Mgmt Assessment.	SR-SW02-087										
Complete TRU Pad #2 Retrieval	SR-SW02-032										
Complete TRU Pad #3 Retrieval	SR-SW02-033										

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Project Baseline Summary Report

Data Source: EM CDB

Operations/Field Office: Savannah River

Site Summary Level: Savannah River Site

Project SR-SW02 / Transuranic Waste Project

Report Number: GEN-01b

Print Date: 3/9/2000

HQ ID: 0480

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Project Mission Complete	SR-SW02-008				Y						
Vent & Purge 3000 Drums	SR-SW02-061										
Project Start	SR-SW02-001			Y							

Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planned 2004
TRU														
Treatment	M3	0.00	1,500.25	1,500.25	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRU														
Storage	M3							11,117.85	11,420.63	11,512.37	11,521.78	11,659.20	11,795.85	11,584.36
TRU														
Ship. to WIPP	M3	1,600.00	18,274.20	19,874.20	0.00		0.00	0.00	0.00	52.42	139.78	143.80	157.25	474.75
LLW														
Storage	M3													
Tech.														
Deployed	Ntd	2.00	1.00	3.00							2.00			
Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035	Planned 2036 - 2040
TRU														
Treatment	M3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	424.00	854.60	221.65	0.00	0.00
TRU														
Storage	M3	11,584.36	11,529.53	11,474.70	10,711.96	9,585.33	8,928.80	8,586.31	7,226.67	3,538.92	597.12	0.00	0.00	0.00

Dataset Name: FY 1999 Planning Data

Page 9 of 15

Date of Dataset: 9/20/1999

Project Baseline Summary Report

Data Source: EM CDB

Operations/Field Office: Savannah River

Site Summary Level: Savannah River Site

Project SR-SW02 / Transuranic Waste Project

Report Number: GEN-01b

Print Date: 3/9/2000

HQ ID: 0480

Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035
TRU													
Ship. to WIPP	M3	474.75	316.00	316.00	296.60	547.80	833.36	1,048.33	4,308.35	5,241.60	4,395.94	1,602.22	0.00
LLW													
Storage	M3												
Tech.													
Deployed	Ntd					1.00							
Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total			
TRU													
Treatment	M3	0.00								1,500.25			
TRU													
Storage	M3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
TRU													
Ship. to WIPP	M3	0.00								0.00	19,874.20		
LLW													
Storage	M3												
Tech.													
Deployed	Ntd									3.00			

Technology Needs

Dataset Name: FY 1999 Planning Data

Date of Dataset: 9/20/1999

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-SW02 / Transuranic Waste Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0480**

Technology Needs

Site Need Code: SR99-1001

Site Need Name: Technologies to Increase Transuranic Waste Transportation System Curie, Size, and Weight Limits

Focus Area Work Package ID: MW-05

Focus Area Work Package: Payload Enhancement for Transporting TRU Waste within Restrictive Regulatory Limits

Focus Area: MWFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Both

Technologies

Hydrogen Gas Getters

Flammable Gas Headspace Measurement

Deployment of TRU Solutions

Cost Savings (in thousands of dollars)

Range of Estimate

Related CCP Milestones

Related Waste Streams

Agree?

Change?

00592: -

Y

N

Site Need Code: SR99-1003

Site Need Name: Improvements to Physical, Chemical, and Radionuclide Quantification of Solid Waste

Focus Area Work Package ID: MW-05

Focus Area Work Package: Payload Enhancement for Transporting TRU Waste within Restrictive Regulatory Limits

Focus Area: MWFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies

Nondestructive Waste Assay Using Combined Thermal Epithelial Neutron Interrogation

Characterization of RCRA Material Non-Destructive Assay Development

Characterization of Contact-Handled Waste Containers for RCRA Material using Pulsed Fast Thermal Neutron Analysis

Nondestructive Waste Assay Using Gamma-Ray Active and Passive Computed Tomography

Cost Savings (in thousands of dollars)

Range of Estimate

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-SW02 / Transuranic Waste Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0480**

Technology Needs

NDA of Boxes Containing TRU Waste

Characterization - Crate Surrogates

NDA Capability Evaluation Project 0

Expert System Development for NDA Data Validation

Transuranic Optimized Measurement System (TOMS) 0

Related CCP Milestones

Related Waste Streams

Agree?

Change?

00568: TAF - Low Activity TRU HEPAs Requiring Processing

Y

N

00565: TAC - Low Activity TRU Drums Requiring Processing

Y

N

00572: TAJ - Remote Handled Waste Requiring Treatment

Y

N

00570: TAH - Carbon Steel Containers and Casks Requiring Processing

Y

N

00567: TAE - High Activity Drums Requiring Treatment

Y

N

00566: TAD - High Activity TRU Drums Requiring Processing

Y

N

00569: TAG - High Activity TRU HEPAs Requiring Treatment

Y

N

00571: TAI - Carbon Steel Containers and Casks Requiring Treatment

Y

N

00564: TAB - <100 nC/g Alpha Contaminated (mixed) Drums

Y

N

00563: TAA - <100 nC/g Alpha Contaminated (non-mixed) Drums

Y

N

Site Need Code: SR99-1007

Site Need Name: Treatment of High Activity TRU (Pu238) Waste for Destruction of Organic Constituents

Focus Area Work Package ID: MW-07

Focus Area Work Package: Alternatives to Incineration to Reduce Emission Hazards.

Focus Area: MWFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Cost

Technologies

Direct Chemical Oxidation

Cost Savings (in thousands of dollars)

Range of Estimate

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-SW02 / Transuranic Waste Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0480**

Technology Needs

Alternative Oxidation Technology - PCBs

Acid Digestion Alternative Oxidation Technology - SRS Demonstration

0

Related CCP Milestones

Related Waste Streams

Agree?

Change?

00591: -

Y

N

00585: -

Y

N

00577: TAO - TRU Waste Segregated and Repackaged for WIPP Disposal

Y

N

00582: -

Y

N

00588: -

Y

N

00580: -

Y

N

Site Need Code: SR99-1010

Site Need Name: Capability Required for the Visual Inspection, Sorting, Segregating and Repackaging of Pu-239 and Pu-238, and, Potentially, Remote Handled Wastes Currently Stored in 55 and 83-Gallon Drums, to Satisfy WIPP Requirements

Focus Area Work Package ID: MW-03

Focus Area Work Package: Handling Mixed Waste Contaminated Materials During Characterization, Treatment, Packaging, and Disposal

Focus Area: MWFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Cost

Technologies

Cost Savings (in thousands of dollars)

Range of Estimate

Mechanical Systems - Handling Material in Contact-handled Processes using HANDS-55 Systems

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Page 13 of 15

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-SW02 / Transuranic Waste Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0480**

Technology Needs

Related CCP Milestones

Related Waste Streams

Agree?

Change?

00568: TAF - Low Activity TRU HEPAs Requiringt Processing

Y

N

00565: TAC - Low Activity TRU Druma Requiring Processing

Y

N

00570: TAH - Carbon Steel Containers and Casks Requiring Processing

Y

N

00567: TAE - High Activity Drums Requiring Treatment

Y

N

00566: TAD - High Activity TRU Drums Requiring Processing

Y

N

00569: TAG - High Activity TRU HEPAs Requiring Treatment

Y

N

00571: TAI - Carbon Steel Containers and Casks Repriring Treatment

Y

N

Site Need Code: SR99-1012

Site Need Name: Capability for Remote Handled Size Reduction of TRU Mixed and Non-Mixed Waste

Focus Area Work Package ID: MW-03

Focus Area Work Package: Handling Mixed Waste Contaminated Materials During Characterization, Treatment, Packaging, and Disposal

Focus Area: MWFA

Agree with Technology Link: Y

Benefits (Cost, Risk Reduction, Both): Risk Reduction

Technologies

Cost Savings (in thousands of dollars)

Range of Estimate

Mechanical Systems - Adaptation and Development of Size Reduction Equipment for Remote Handled Waste

Related CCP Milestones

Related Waste Streams

Agree?

Change?

00571: TAI - Carbon Steel Containers and Casks Repriring Treatment

Y

N

Technology Deployments

Deployment Year

Deployment Status

Planned

Forecast

Actual Date

Dataset Name: **FY 1999 Planning Data**

Date of Dataset: **9/20/1999**

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Savannah River**

Site Summary Level: **Savannah River Site**

Project **SR-SW02 / Transuranic Waste Project**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0480**

Technology Deployments

		Deployment Year		
<u>Deployment Status</u>		<u>Planned</u>	<u>Forecast</u>	<u>Actual Date</u>
Technology Name:	Mechanical Systems - Handling Material in Contact-handled Processes using HANDS-55 Systems			
Deployment Commitment		2001		
Technology Name:	Improvements to Physical, Chemical and Radionuclied Quantification of Solid waste			
Potential Deployment		2001		
Technology Name:	Technologies to increase TRU Waste transportation Curie, Size, and weight limits			
Potential Deployment		2008		